

the restriction requirement, has also been withdrawn by the Examiner. The Examiner's specific confirmation in this regard is respectfully requested.

35 U.S.C. §112 Rejection

The Examiner rejected claims 8 and 9 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner objected to the apparent use of the term HunterLab as a trademark in each of those claims.

Claims 6, 13 and 18 also appear to be rejected under 35 U.S.C. 112, second paragraph, as being indefinite. With regard to these claims, the Examiner has indicated that the term "like" renders the claims indefinite because the claims include elements not actually disclosed.

Response to the §112 Rejection

Applicant notes that the HunterLab color scale coordinates of L\*, a\*, or b\* are very well known standards used by those skilled in the art, along with other well known color scale systems, such as the CIELAB color scale system. Thus, the term "HunterLab" is now used in claims 8 and 9 to refer to this well known color scale system, rather than as a trademark identifying the source of a particular product. Claims 8 and 9, as amended, are therefore not indefinite under 35 USC §112.

Claims 6, 13 and 19 have been amended to remove the term "likes." It is submitted that the amended claims 6, 13 and 19 all comply fully with 35 U.S.C. §112.

35 U.S.C. § 103(a) Rejection over George and Katsamberis

Claims 1-7, 10, 12-16 and 26-29 have been rejected under 35 U.S.C. 103(a) as being unpatentable over George et al. (U.S. Patent No. 5,516,573) in view of Katsamberis (U.S. Patent No. 5,258,225). The Examiner has stated that George et al. discloses granules coated with a ceramic (column 3, lines 8-12) dispersed in adhesive and asphalt (column 9, lines 30-32) located on the surface of a shingle or roofing material (Figure 3, #63 and column 46-47) where the shingle has a non-woven substrate saturated with asphalt (column 9, lines 24-25). The Examiner has conceded that George et al. fails to disclose the granules being attached to a polymeric film with cured adhesive, the adhesive being cured by ultraviolet radiation, thermal radiation, actinic radiation, ionizing radiation, moisture activation, photoactivation or

combinations thereof, the adhesive being flexible as indicated by tensile elongation of 25% or greater according to ASTM D-882.97, the adhesive selected from acrylated urethanes, multi-functional acrylate monomers, acrylated epoxies, acrylated polyesters, acrylated polyethers, urethanes, epoxies, acrylics, phenolics, cyanate esters, bismaleimides, and hot melts, the adhesive is an acrylated aliphatic urethane, and the film or cured adhesive containing toughening agents, pigments, adhesion promoters, dyes, filling agents, initiators, catalysts, antimicrobials, algaecides, ultraviolet stabilizers, ultraviolet absorbers, antioxidants or combinations thereof.

However, the Examiner noted that Katsamberis teaches an adhesive made from acrylated aliphatic urethane cured with ultraviolet radiation (column 11, claims 1 and 3) and containing ultraviolet absorbers and photoinitiators (column 8, lines 19-61) on a polycarbonate film (column 9, lines 47-51) for the purpose of making an article with an abrasion resistant coating.

The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have provided the cured adhesive made from acrylated aliphatic urethane with ultraviolet absorbers and photoinitiators on a film in George et al. in order to make an article with an abrasion resistant coating as taught by Katsamberis.

Response to the Rejection over George and Katsamberis

Applicants invention as defined in claim 1 is an integrated granule product comprising a film having a plurality of ceramic coated granules bonded to said film by a cured adhesive. The integrated granule product of claim 1 is an intermediate product, useful for application onto various substrates to form articles such as roofing shingles and flooring materials.

George et al. is directed to roofing materials formed from granules coated with a ceramic embedded in the asphalt of a roofing shingle (column 2, lines 45-47). Contrary to the assertion in the Office Action, the granules are not dispersed in adhesive. Rather, an amount of adhesive is sprayed onto the surface of the asphalt in thin streams, preferably so as to cover 50% to 75% of the surface (column 2, lines 48-58), and the granules are then forced into the asphalt and adhesive (column 8, lines 45-51). The granules are secured within the product by both the upper coating of asphalt and the applied adhesive (column 9, lines 30-32).

Thus, in addition to those differences between the claimed invention and George et al. specifically acknowledged in the Office Action, George et al. fails to disclose granules

bonded to a film by an adhesive. In fact, even the Office Action asserts merely that George et al. discloses granules dispersed in adhesive and asphalt located on the surface of a shingle or roofing material. As noted, that is not the invention defined by the claims.

The Office Action attempts to combine George et al. with Katsamberis, which is noted to teach an adhesive made from acrylated aliphatic urethane cured with ultraviolet radiation (column 11, claims 1 and 3) and containing ultraviolet absorbers and photoinitiators (column 8, lines 19-61) on a polycarbonate film (column 9, lines 47-51) for the purpose of making an article with an abrasion resistant coating.

Katsamberis is directed to acrylic coatings useful for providing abrasion resistance to polycarbonate substrates used as glazings or automotive headlamps (column 1, lines 12-16; claim 1). Katsamberis lacks any discussion whatsoever of an integrated granule product, roofing shingles or flooring materials.

In this light, it is submitted that Katsamberis is non-analogous art. A prior art reference, in order to be relied upon as basis for rejecting the claims, must either be in the field of applicant's endeavor or, if not, be reasonably pertinent to a particular problem with which the invention was concerned. *In re Oetiker*, 24 USPQ 2d 1443 (Fed. Cir. 1992). The combination of elements from non-analogous sources, in a manner that reconstructs the applicants' invention only with benefit of hindsight, is insufficient to present a *prima facie* case of obviousness. *Id.*

As noted above, Katsamberis is outside the field of the inventors' endeavor. In addition, Applicants were seeking to develop an integrated granule product that was capable of preventing the degradation of an underlying asphalt-based substrate, prevent darkening due to exposed black asphalt in gaps surrounding the granules, and separate the granules from the underlying asphalt to prevent discoloration. This contrasts with the aim of Katsamberis, which was to provide a coating that increased the abrasion resistance of a polycarbonate substrate. In the applicants' integrated granule product, as well as the roofing material of George et al., the ceramic coated granules provide abrasion resistance to the products. Katsamberis is not, therefore, pertinent to the particular problems with which the Applicants were concerned when they made their invention. As a result, Katsamberis is non-analogous prior art, and it is improper to consider it as part of an obviousness determination.

Even if Katsamberis could be properly considered in an obviousness determination, there is no basis for combining Katsamberis with the roofing material of George et al. There must be some suggestion in the prior art to make the combination. Absent such a showing in

the prior art, the Applicants' teaching has been impermissibly used to hunt through the prior art for the claimed elements and combine them as claimed. *In re Laskowski*, 10 USPQ 2d 1397, 1398 (Fed. Cir. 1989). For one thing, the references are devoid of any suggestion of the above noted advantages of providing an integrated granule product comprising a film having a plurality of ceramic coated granules bonded to said film by a cured adhesive as an intermediate product useful for applying to substrates to form articles such as roofing shingles and flooring materials.

Reviewing only George et al. and Katsamberis, there would have been no motivation or suggesting for using the coated polycarbonate of Katsamberis on the roofing material of George et al., as the coated ceramic granules of George et al. provide the disclosed roofing material with abrasion resistance. The only source of the noted advantages of the claimed integrated granule product is *applicants' specification*, and it is improper to use this as the purported motivation for combining the references. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Finally, even if was proper to combine George et al. and Katsamberis, the resulting combination would not be an integrated granule product comprising a film having a plurality of ceramic coated granules bonded to said film by a cured adhesive, as defined by claim 1. Neither reference contains any suggestion for bonding granules to a film with an adhesive.

For all of these reasons, the invention defined by claim 1 is patentable over the cited references. As claims 2-11 and new claim 35 depend directly from claim 1, these claims are also patentable for the same reasons.

It is further noted that claim 35 defines the integrated granule product wherein the granules are bonded to the film by a layer of cured adhesive. Neither reference discloses any adhesive layer, and claim 35 is patentable over the cited references for this additional reason.

Claim 12 defines an integrated granule product suitable as an exposed surface layer for a roofing shingle construction, comprising a plurality of ceramic coated granules bonded to a self-supporting cured adhesive film.

Neither reference discloses a self-supporting adhesive film, let alone such a film having a plurality of ceramic coated granules bonded thereto. As discussed above, George et al. describes spraying thin streams of an adhesive onto an asphalt surface and then pressing granules into the asphalt. The adhesive has not been shown to form a film, and is clearly not self-supporting as that term is defined in the present specification. The coating composition of Katsamberis is applied to a polycarbonate substrate. Katsamberis lacks any suggestion to

USSN: 09/691,352

Docket No.: 55126US002

even attempt to form a self-supporting adhesive film with the coating composition, or to bond ceramic coated granules thereto.

For these reasons, the invention defined by claim 12 is patentable over the cited references. As claims 13-16 depend directly from claim 12, these claims are also patentable for the same reasons.

Claim 26 defines an article comprising the integrated granule product of claim 1 bonded to a substrate. Thus, claim 26 and dependent claims 27-31 are patentable at least for all of the reasons noted above with regard to claim 1.

35 U.S.C. § 103(a) Rejection over George, Katsamberis and Weaver

Claims 8 and 9 were rejected in the Office Action under 35 U.S.C. 103(a) as being unpatentable over George et al. in view of Katsamberis, and further in view of Weaver et al. (U.S. Patent No. 5,666,776). It was noted that Weaver et al. teaches a variety of colors including white (column 4, lines 2-8) of ceramic coated granules on the surface of a shingle for the purpose of giving the shingle a desired color. The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have provided the colored ceramic granules in the modified George et al. in order to give the shingle a desired color as taught by Weaver et al.

Response to the Rejection over George, Katsamberis and Weaver

Claims 8 and 9 depend directly from claim 1, and are therefore patentable over the cited references at least for all of the reasons noted above with regard to claim 1.

35 U.S.C. § 103(a) Rejection over George, Katsamberis

Thomas and Kalkanoglu

Claims 11, 17-19 and 30-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over George et al. in view of Katsamberis as applied to claims 1-7, 10, 12-16 and 26-29, and further in view of Thomas et al. (U.S. Patent No. 6,291,054) and Kalkanoglu (U.S. Patent No. 5,206,068).

It is asserted that George et al., as modified with Katsamberis, discloses the cured adhesive film above except for the film including a primer layer, the granule product being suitable as an exposed surface layer for a floor construction where a plurality of ceramic coated granules are bonded to a supporting cured adhesive film and a polymeric sealant coat

is applied over said plurality of ceramic coated granules, the article being a color covering and the article comprising a polymeric sealant applied over the article.

Thomas et al. is cited as teaching a primer layer (column 2, lines 37-41) with a coating completely covering the ceramic particles (column 3, lines 47-62) on a substrate for the purpose of making an article that is abrasion resistant. Kalkanoglu is cited as teaching ceramic coated granules in various colors (column 4, lines 5-10) used on the surface of a roofing component or flooring (column 3, line 56 to column 4, line 2) for the purpose of providing UV and heat protection.

It is concluded that it would have been obvious to one of ordinary skill in the art at the time the Applicants' invention was made to have provided the primer layer and the coating covering the ceramic particles in flooring in the modified George et al. in order to make an abrasion resistant article that is heat and UV protected as taught by Thomas et al. and Kalkanoglu.

Response to §103(a) Rejection over George, Katsamberis

Thomas and Kalkanoglu

Claim 11 depends directly from claim 1, and is therefore patentable over the cited references at least for all of the reasons noted above with regard to claim 1.

Claim 17 defines an integrated granule product suitable as an exposed surface layer for a floor construction, comprising a plurality of ceramic coated granules bonded to a self-supporting cured adhesive film and a polymeric sealant coat applied over said plurality of ceramic coated granules.

As discussed above, neither reference discloses a self-supporting adhesive film, let alone such a film having a plurality of ceramic coated granules bonded thereto. Accordingly, the invention defined by claim 17 is patentable over the cited references. As claims 18 and 19 depend directly from claim 17, these claims are also patentable, at least for the same reasons. In addition, it is noted that the Thomas describes a non-stick coating surface (Abstract). Such a surface is believed to be inherently unsuitable for the exposed surface layer for a floor construction of as required by claims 17-19 of the present invention.

Claims 30 and 31 depend from claim 26, and again are therefore patentable over the cited references for all of the reasons noted above with regard to claim 26.

USSN: 09/691,352

Docket No.: 55126US002

Conclusion

It is respectfully submitted that the instant amendment places the application in condition for allowance, and a favorable action to that end is courteously solicited. In the event the Examiner would prefer language other than that set forth in the claims, it is requested that a telephone interview be had to assist in expediting the prosecution of the application.

Respectfully submitted,

By

Dean M. Harts

Registration Number 47,634	Telephone Number 651-737-2325
Date 18 June 2002	

Office of Intellectual Property Counsel  
3M Innovative Properties Company  
P.O. Box 33427  
St. Paul, Minnesota 55133-3427  
Facsimile: (651) 736-3833  
DMH/DS/

Version With Markings to Show Changes MadeIn the Specification:

Please amend the paragraph beginning on page 6, line 3 as follows:

In general, the non-asphaltic adhesive can be of any chemistry that will provide a suitable coating on the film and permit the subsequent bonding of the ceramic coated granules onto the film. Those skilled in the art are capable of selecting a specific adhesive to match film characteristics. Examples of suitable materials include acrylated urethanes, multifunctional acrylate monomers, acrylated epoxies, acrylated polyesters, acrylated polyethers, urethanes, epoxies, acrylics, phenolics, cyanate esters, bismaleimides, hot melts like [likes] polyester, polyamides, polyolefins, derivatized polyolefins or combinations thereof. A particularly preferred adhesive includes acrylated aliphatic urethanes, such as Ebecryl 270 from UCB Chemicals Corporation of Smyrna, GA.

Please amend the paragraph beginning on page 11, line 17 as follows:

The integrated granule product may be applied onto various substrates to form different products. The substrates generally serve as a base for receiving the integrated granule product of the present invention. The base substrate may [be] function as a mechanism for attaching the product to another object. For example, the integrated granule product can be applied onto an asphalt-based substrate [substrates] to form a roofing shingle. The roofing shingle is then attached to the roof of a building structure. Alternatively, the integrated granule product may be attached directly to a fixed substrate, such as a floor or other stationary building structure.

In the Claims:

6. (First Amendment) The product of claim 1, wherein said adhesive is selected from acrylated urethanes, multifunctional acrylate monomers, acrylated epoxies, acrylated polyesters, acrylated polyethers, urethanes, epoxies, acrylics, phenolics, cyanate esters, bismaleimides, hot melts of [likes] polyester, polyamides, polyolefins, derivatized polyolefins or combinations thereof.

USSN: 09/691,352Docket No.: 55126US002

9. (First Amendment) The product of claim 1, wherein said ceramic coated articles are white and the product exhibits [an] a HunterLab color scale coordinate L\* value of 64 or greater [according to HunterLab spectrophotometer test procedures].

13. (First Amendment) The product of claim 12, wherein said cured adhesive is selected from acrylated urethanes, multifunctional acrylate monomers, acrylated epoxies, acrylated polyesters, acrylated polyethers, urethanes, epoxies, acrylics, phenolics, cyanate esters, bismaleimides, hot melts of [likes] polyester, polyamides, polyolefins, derivatized polyolefins or combinations thereof.

18. (First Amendment) The product of claim 17, wherein said cured adhesive is selected from acrylated urethanes, multifunctional acrylate monomers, acrylated epoxies, acrylated polyesters, acrylated polyethers, urethanes, epoxies, acrylics, phenolics, cyanate esters, bismaleimides, hot melts of [likes] polyester, polyamides, polyolefins, derivatized polyolefins or combinations thereof.